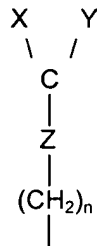


1. (Three Times Amended) A purified peptide consisting of about 21 or fewer amino acids, reactive with autoimmune antibodies from a patient suffering from rheumatoid arthritis, wherein the peptide is derived from a contiguous stretch of amino acid residues encoded by mRNA encoding an antigen recognized by autoimmune antibodies in a patient with rheumatoid arthritis, said mRNA comprising a codon for at least one arginine residue, wherein at least one arginine residue in the peptide comprises a modified arginine residue with a side chain of the formula:



wherein

X is  $\text{NH}_2$ ,  $\text{CH}_3$ ,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

Y is  $\text{O}$ ,  $\text{NH}$ ,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

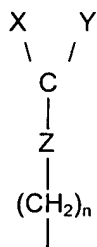
Z is  $\text{O}$ ,  $\text{NH}$  or  $\text{CH}_2$ ; and

n is 2, 3 or 4, on the condition that when  $\text{X} = \text{NH}_2$  and  $\text{Z} = \text{NH}$ , Y is not  $\text{NH}$ .

4. (Five Times Amended) A peptide according to claim 1 wherein the peptide consists of a linear peptide selected from the group of peptides consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 and SEQ ID NO:9.

6. (Three Times Amended) A peptide according to claim 5 wherein the cyclic peptide consists of SEQ ID NO 10.

17. A purified peptide consisting of about 21 or fewer amino acids reactive with autoimmune antibodies from a patient suffering from rheumatoid arthritis, wherein the peptide is derived from a contiguous stretch of amino acid residues encoded by mRNA encoding a filaggrin or profilaggrin antigen, the mRNA comprising a codon for at least one arginine residue, wherein at least one arginine residue in the peptide comprises a modified arginine residue with a side chain of the formula:



wherein

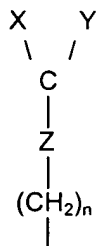
X is  $\text{NH}_2$ ,  $\text{CH}_3$ ,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

Y is O, NH,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

Z is O, NH or  $\text{CH}_2$ ; and

n is 2, 3 or 4, on the condition that when  $\text{X} = \text{NH}_2$  and  $\text{Z} = \text{NH}$ , Y is not NH.

21. (Twice Amended) A purified peptide consisting of amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10, wherein X therein is a modified arginine residue with a side chain of the formula:



wherein

X is  $\text{NH}_2$ ,  $\text{CH}_3$ ,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

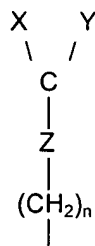
Y is O, NH,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

Z is O, NH or  $\text{CH}_2$ ; and

n = 2, 3 or 4, on the condition that when X =  $\text{NH}_3$  and Z = NH, Y is not NH.

Add the following new claims:

--25. A cyclic peptide reactive with autoimmune antibodies from a patient suffering from rheumatoid arthritis, wherein the peptide is derived from a contiguous stretch of amino acid residues encoded by mRNA encoding a filaggrin or profilaggrin antigen, the mRNA comprising a codon for at least one arginine residue, wherein at least one arginine residue in the peptide comprises a modified arginine residue with a side chain of the formula:



wherein

X is  $\text{NH}_2$ ,  $\text{CH}_3$ ,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

Y is O, NH,  $\text{NHCH}_3$  or  $\text{N}(\text{CH}_3)_2$ ;

Z is O, NH or  $\text{CH}_2$ ; and

n is 2, 3 or 4, on the condition that when X =  $\text{NH}_3$  and Z = NH, Y is not NH.

26. The peptide of claim 25 wherein the peptide is cyclicized through a cystine.

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27. The peptide of claim 25 wherein the modified arginine residue is a citrulline residue, such that X is NH<sub>2</sub>, Y is O, Z is NH and N is 3.--

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